

## **ABSTRACT OF THE DISCLOSURE**

Embodiments of the invention provide methods and apparatuses to determine the characteristics of a local loop using the multi-tone line-probing signals of a standard voice-based modem. For one embodiment, the multi-tone, line-probing signals of a voice-band modem are transmitted over a local loop and received at a standard voice band modem. Discrete fourier transform values are determined for each of two or more frequencies of the plurality of frequencies of the multi-tone signals. A set of discrete fourier transform values corresponding to a set of high frequencies is summed to obtain a first value and a set of discrete fourier transform values corresponding to a set of low frequencies is summed to obtain a second value. A power ratio is determined by dividing the first value by the second value. The power ratio is then used to determine a characteristic of the local loop.